

R ESEARCH HIGHLIGHT

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ARCHITECTURE FOR ELDER HEALTH IN REMOTE BRITISH COLUMBIA: A NISGA'A-LED RESEARCH

INTRODUCTION

Influences of housing on health and well-being of First Nations Elders in remote British Columbian communities are explored in this research, which has been completed under the CMHC External Research Program. The research is community-led and facilitated by architect Dr. Nancy Mackin, following principles of participatory research and protocols specified by the Tri-Council and Wilp Wilxo'oskwhl Nisga'a, the Nisga'a University College under the direction of President and CEO Deanna Nyce.

The study investigated interrelationships between architecture and health over time. The goal is to understand the changing context of Elder housing so that landscape, architectural and planning decisions affecting Elders' lives can be based upon an understanding of processes that influence community health.

METHODOLOGY

Cultural leaders from the Nisga'a First Nation contributed their knowledge to this research on behalf of their home villages of New Aiyansh, Gitwinksihlkw, Laxgalts'ap and Gingolx, all located in the Nass River Valley of Northern B.C. adjacent to the Alaska Panhandle. Primary and secondary research was gathered in four stages:

1. A history of architecture and its influences on Elder health within the study region was assembled from literature and from interviews held with Elders.
2. A geography of Elder housing and support services available in Northern British Columbia was gathered from January to March 2005 and added to a Geographic Information System database.
3. Aboriginal peoples across Canada are now working towards self-government and renewed ownership of traditional lands, as well as new solutions for Elder housing and health. The Nisga'a Nation set an example for many communities with the ratification of the Nisga'a Treaty in May 2000. Within this context of change from within, a workshop was held with 16 cultural leaders from the Nisga'a First Nation in February 2005 to establish key principles through which architecture can enhance Elder health in remote regions. Research participants led discussions, prioritized topics of concern, and were compensated for their time and expertise.
4. Research participants were asked to comment upon research findings and clarify how the ideas can be adapted to suit Indigenous peoples in remote communities elsewhere in Canada and the world. Examples from communities across Canada showed working applications of architectural ideas distilled from history and the workshops.

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FINDINGS

I. Lessons from Architectural history

Northwest Coast First Nations history shows that construction ideas evolved over countless generations of experimentation and practice, thereby helping individuals and communities to remain strong despite environmental changes such as glaciation and floods or social changes such as, post-volcano restructuring, the reservation system and residential schools. Although architectural ideas changed over time, the history shows that certain principles and practices remained constant and contributed to the ongoing well-being of peoples and ecosystems.

A key health-giving principle in Northwest Coast architectural history is that of respect for resources. Respect for plants, animals, rocks and soils, water and air is part of the worldview, common among long-resident Indigenous peoples worldwide, that perceives all parts of the environment as spiritually and reciprocally linked with the lives of people. Respect for the environment translated into practices for maintaining healthy ecosystems, such as carefully harvesting and detailing of resources used for construction. The massive pole-and-beam house, called *wilp* in Nisga'a, was constructed from a variety of woods (Red-cedar, Mountain maple, Wild crabapple), ropes (from Red-cedar root, small animal intestines), and thermal and moisture protection (tree moss from Cottonwoods, fir pitch) all of which were harvested in such a way as to ensure that the resources would be available for many generations. Detailing of the *wilp* or longhouse often included slotted grade beams and overhead beams that permitted valued cedar planks to be slid out and used elsewhere. Construction practices that indicate respect for building components are an example of Indigenous peoples' Traditional Ecological Knowledge—a body of wisdom recognized nationally and internationally as essential for health and well-being of societies and ecosystems, and for the maintenance of cultural diversity.

In the case of traditional Northwest Coast housing, health and well-being were maintained for people as well as ecosystems, and Elders benefited from healthful design strategies. Traditionally, the *wilp* would be built at or near grade around a fireplace where Elders could keep warm as they taught and worked. Tradition-based housing was therefore relatively easy for Elders to enter. Because of

the grade-level fireplace, foods and other goods could be brought into the cooking area of traditional houses by people of all ages. The abundance of a range of foods has been established as one of the keys to Northwest Coast First People's health and longevity. Also important for Elder health was the social structure that was reinforced through traditional housing designs, which accommodated the extended family who could ensure Elders lived comfortably into advanced age.

So closely linked were the concepts of house and extended family that both are referred to as *wilp* in the Nisga'a language. Archeological evidence shows that people lived to old age within the social structure, and several early explorers document how oldest Northwest Coast family members were cared for within the family structure. While providing a place for Elders to live and teach, the architecture of the Northwest coast supported seasonal food-related activities. Structures such as oolichan drying racks and smokehouses facilitated a traditional diet characterized by variety and nutritional excellence. Since the diverse diets of people whose livelihoods relied mainly on hunting, fishing and gathering, has been consistently found to positively influence peoples' health within those cultures, architectural works that reinforce the traditional diet receive some credit for the health of pre-contact Northwest Coastal peoples.

By contrast, architectural designs that were imposed upon British Columbia's First Peoples in the twentieth century often had negative health impacts. Most of today's Elders and many younger adults lived their young years in crowded residential schools, which contributed to outbreaks of infectious diseases. Housing within remote communities was built with little or no design consultation with, or input from, Indigenous residents. Within these houses, access for Elders was inhibited by the mainly two-level designs that had living quarters and kitchens on the upper floor. Access to smokehouses and other traditional food processing areas was restricted by the unsuitable kitchen location and Western-style kitchen designs. Construction quality was often poorly monitored, leaving many houses with health-threatening problems including mold and mildew. Meanwhile, changes in Indigenous peoples' relationship to place had direct health impacts. High death rates of Aboriginal peoples compared with non-Native British Columbians correlated directly with imposed spatial changes that transformed landscapes, housing and places for education.¹

¹ See Colonizing Bodies (1998) by Dr. Mary-Ellen Kelm.

2. Geography of housing and health in remote regions of Northern British Columbia

The mainly second level living, such as that found in most of the Nass Valley and other remote First Nations' housing, is dangerous and sometimes difficult for Elders to manage. It is therefore important for those with restricted health or mobility to know where to find assisted or continuous care housing and Elder day programs. This research discovered that although two remote communities on Haida Gwaii have built Elder housing and have nearby day programs, most assisted living options of Elders are in distant urban communities. The geography of current Elder housing options provided a reference point from which the Elders involved in this research could recommend changes.

Because of the rarity of Elder-suited housing that includes care of those who become ill or injured, many worry that if they need intensive care for awhile it may be hard to come home and resume earlier levels of independence. Research participants also noted that many Elders want to and need to stay active, but family members worry about safety—particularly since so many Elders have to go up and down the stairs to undertake traditional food processing practices.

3. Workshop recommendations and examples from remote communities located elsewhere

When architectural principles and practices that facilitate Elder well-being were distilled from the history, research participants confirmed that many are equally valuable in the present day. For example, nearly all research participants recommended the building of a cultural village that would address the needs of young people while enabling Elders to continue being active participants in the communities.

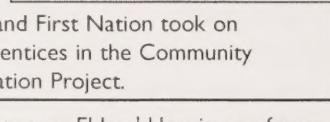
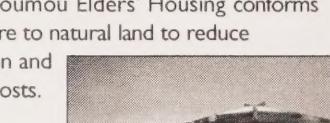
The cultural village would include buildings for producing food in the traditional way as well as housing and educational facilities for people of all ages. The Nisga'a Nation envisions a cultural village that is a centre of the post-secondary educational institution *Wilp Wilxo'oskwhl Nisga'a*. Building designs are based on the traditional longhouse and other structures for resource management and ceremonial teaching. Facilities for Elders are integrated with education, health, social and cultural services.

Depending on the processes of design, construction and funding, a cultural village concept could provide meaningful employment opportunities for the young while acknowledging Elders' importance to the community. All facilities—Elder housing, educational centres, wilderness camps—could be built by the local people, with youth apprentices forming a key part of the work force. With an apprentice system, building construction itself will follow with the Nisga'a historical solution of generations looking after one another, and of learning by doing.

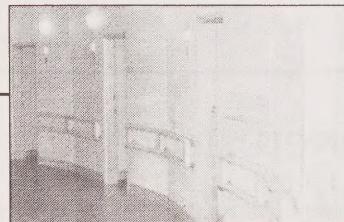
Architects can facilitate gain of construction knowledge within remote Aboriginal villages by drawing buildings so clearly that inexperienced tradespersons can understand what is intended. Simpler detailing, less complex terminology, no obscure abbreviations—these are among the essentials of drawing buildings so that young Aboriginal citizens can train "on the job" with the assistance of experienced builders.

Traditional systems of construction and social organization usually require some adaptation to work for modern times, noted research participants. The charts list historic concepts related to health and adaptations of those concepts to the future. Ideas within the charts were distilled from workshop participants' comments. Many ideas have also been tested in communities in other parts of Canada.

Elders' challenges and architectural solutions: population health

Challenges	Nisga'a historical/cultural solution	Potential present-day solution(s)	First Nation community that met the challenge
Physical architecture	A house is an expression of extended family crests.	The village is the longhouse, although trained health workers and Elder-suited housing is missing.	Seabird Island First Nation Sustainable Community Demonstration Project is designed in a manner that provides sustainable housing for the extended family unit. 
Elderly friends and relatives sent to distant care facilities appear to lose their cultural links and mental faculties.	Elders lived with extended families on their own land, usually on a river or stream and encompassing several ecosystems; Elders guided resource management.	Integrated communities that address cultural, educational, social and health needs of Elders. Many Elders recommended the construction of a traditional village that would enable Elders to be well looked after while maintaining connections to the land and their communities.	Wilp Wilxo'oskwhl Nisga'a campus is a total village concept that involves Elders in teaching while providing cultural, health and social services for all generations. Mohawk Bay of Quinte built a community that includes ground-level units for Elders.
Elders worry that the diminished importance of large extended families lead to loss of cultural independence and strength.	Longhouses, and then large Victorian houses, permitted generations to support one another.	The village is the longhouse, with housing close to the centre of village life and places where Elders can teach the young.	Seabird Island First Nation Sustainable Community Demonstration Project is designed to include suites for extended family members and a wellness garden where traditional plant uses can be passed on to the next generation.
No ceremonial areas available for teaching young people, who Elders worry are having children before they are ready.	Elders used to teach children the values of the community in specially designed locations.	Make an integrated "Cultural village" that includes Elders in Education and includes buildings that facilitate the teaching of traditional practices and values.	Wilp Wilxo'oskwhl Nisga'a includes Elders in campus design and teaching. 
Young people are lost to drugs and alcohol.	Longhouses were built to accommodate large families that took care of each other.	Build community camps where youth can be instructed in trapping and hunting, such as the one in Bella Bella. Assist youth by involving them in housing.	Seabird Island First Nation took on youth apprentices in the Community Demonstration Project. 
Elders' have concerns for Aboriginal people in cities who want to move back to their homelands but cannot find housing due to the high cost of housing.	Families would combine their efforts to build a longhouse. Early twentieth century villages had sawmills, and people volunteered their time for public works projects.	Take a Habitat for Humanities approach: hire youth as apprentices. Community creation of some of the materials, maybe with a portable sawmill.	Oujé-Bougoumou Elders' Housing conforms infrastructure to natural land to reduce construction and operating costs. 
Elders' knowledge leads to healthy communities. Elders' health improves when given some control over their surroundings.	Elders were influential in community planning and design decisions.	Involve Elders in design. 	A non-Native example is the West Vancouver Seniors Activity Expansion of 1994, by Nancy Mackin Architects, which included over 50 meetings with the seniors whose ideas were summarized in dozens of perspective sketches and models. The Mohawks of the Bay of Quinte First Nation (Tyendinaga) involved Elders in the design of the community's Granny Flats. 

Elders' challenges and architectural solutions: maintaining health of Elders

Elders' challenges	Nisga'a historical/cultural solution	Potential present-day solution(s)	First Nation community that met the challenge
Stairs to houses cause injuries.	Many longhouses were constructed with ground level entrances.	Build houses with the FlexHousing™ feature of making the entrance at street level.	The Mohawks of the Bay of Quinte First Nation Elder housing is single level.
Difficulties bathing.	Traditional bathing in hot springs: Elders could walk into pools from the ground level.	FlexHousing™ has a shower unit that has a slight slant for water drainage but is level with the floor.	Elders' housing by the Mohawks of the Bay of Quinte First Nation have a self-draining shower level with the floor and large bathroom doors that can accommodate a wheelchair.
Asthma and respiratory problems.	Orally conveyed traditional landscape knowledge informed builders about healthy building materials.	FlexHousing™ recommends the use of non-toxic products and paints in buildings and no carpets.	The Seabird Island First Nation Sustainable Community Demonstration Project uses non-toxic building products and radiant heat to keep floors warm instead of carpet.
Going to and from the smokehouse to the kitchen involves using stairs.	Kitchens were at ground level.	FlexHousing™ recommends no stairs with a kitchen at ground level and an exit from the kitchen to the yard.	Apache housing designed with anthropologist George Esber has ground floor kitchens designed to suit traditional cooking approaches.
Using a grab bar to get into the house or the washroom.	Houses were at ground level. Traditional bathing in hot springs.	FlexHousing™ recommends that houses be at ground level and that grab bars be installed during initial construction.	Rae-Edzo Elders' housing has grab bars at several levels and in strategic places where Elders need them. 
The importance of traditional food, such as smoked fish.	Smokehouses were built so that approximately four families could share them.	Build community smokehouses or build a smokehouse on the back of Elder housing units where they can teach young people how to smoke fish.	Laxgalts'ap Elder housing, by Nancy Mackin Architecture, has a smokehouse behind the house.
The Elders stay strong by remembering their connection with the land.	Longhouses and smokehouses used to be built near the source of much food, the river.	Site housing in a manner that expresses people's relationship with the land.	Lax Kxi Luux and Gitwinksihlkw are traditional river-fronting village sites that are proposed for Nisga'a Elder housing.
Elders are lonely and sometimes at risk when they live by themselves or far from their extended family.	Longhouses allowed extended family members to be in close contact.	Design houses that are attached and have one or two units available for a health caregiver(s). This could provide much-needed youth employment and housing. Build Elder hostels where Elders can get together.	Rae-Edzo and Deline Elder Housing are both within the traditional village boundaries and include caregiver housing. In Metlakatla, Alaska there is an Elder Hostel that has a cafe with organized activities.
Elders are healthier when they eat traditional food.	Food preparation was taught from generation to generation, and the diet was varied and healthful.	Build a community kitchen in the schools and have Elders in to eat. Students could do the cooking (and even the gardening and fishing) as a high school credit course.	A non-First Nations example is Alice Waters' work in American schools, where children help grow, harvest and cook fresh foods.

Elders' challenges and architectural solutions: maintaining healthy ecosystems (people are part of the land)

Challenges	Nisga'a historical/cultural solution	Potential present-day solution(s)	First Nation community that met the challenge
Traditional respect for water.	Houses were sited with access to water as a first priority.	Use low-flow showers.	The Seabird Island First Nation Sustainable Community Demonstration uses water-efficient plumbing fixtures.
Traditional respect for the land.	Longhouses were built in close proximity to one another.	Design higher density housing and make efficient land use to express peoples' relationship to the land.	Laxgalts'ap housing was created with community-led design to reflect cultural values. A non-Native example is West Vancouver Seniors' Activity Centre which was co-designed with the Seniors.
Traditional respect for the resources the land provides.	All parts of trees were used; construction materials were harvested so they would be plentiful for countless generations. Selective harvesting and value for a variety of species ensured future abundance.	Use recycled products. Use building products in a manner that they remain durable for a long time.	Seabird Island First Nation houses have a projected life cycle of 100 years.

CONCLUSIONS

Architecture, health and sustainable design are interdependent. The worldview, held by many Indigenous peoples worldwide, that the health of people and health of ecosystems are interconnected necessitates respect for water, trees and resources. Acknowledging reciprocal relationships between people and other inhabitants of the ecosystem is a key to architectural design for health, since countless generations of experimentation and practice have shown that design decisions beneficial to the health of living and non-living components of the environment will also enhance the health of people and their communities. The Royal Architectural Institute of Canada (RAIC) and the American Institute of Architects (AIA) are now also urging architects to think about the connections among architecture, health and sustainable design in projects of all scales.

Community-led processes bring forward culturally specific needs that must be included if a design is to work within a people's social organization and social use of space.

Elder housing has the potential to catalyze economic and cultural strength from within a community, not only through participation in design decision-making but also through construction projects that involve apprenticeship, local materials production and other community-engaged practices.

Ecological, cultural and economic sustainability provide keys to architecture for Elder Health. Since sending Elders away to urban centres for care and housing takes an enormous toll on cultural strength, and may damage links between youth and Elders, housing for Elders within remote communities is definitely needed in order to sustain community and individual well-being. Further, if housing is to contribute to well-being of communities, it must be sustainable: that is, it must last a long time and work well within the context of the culture, ecology and economy of the people and their homelands.

OTHER RESEARCH OF INTEREST

Free Publications

An Examination of the Use of Domestic Space by Inuit Families Living in Arviat, Nunavut - *Research Highlight*
(Product Number 63600)

A Review of Training and Delivery Options Concerning Aboriginal Housing - *Research Highlight*
(Product Number 63618)

Building a Sustainable Future, Seabird Island First Nation Sustainable Community Demonstration Project
(Product Number 63553)

Comprehensive Community Planning: Experiences in Aboriginal Communities - *Research Highlight*
(Product Number 63596)

Building Communities: First Nations Best Practices for Healthy Housing and Sustainable Community Development
(Product Number 62317)

Arctic Hot Roof Design - *About Your House* (North Series)
(Product Number 62313)

Building with Structural Panels, Repulse Bay - *About Your House* (North Series)
(Product Number 62303)

Eagle Lake Healthy House - *About Your House*
(North Series)
(Product Number 62154)

Priced Publications

FlexHousing: The Professional's Guide
(Product Number 61844)

Maintaining Seniors' Independence: A Guide to Home Adaptations
(Product Number 61042)

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